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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/534,893

10/06/2006

Toshiyuki Watanabe

58222US004

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09/02/2009

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EXAMINER

DUONG, THANH P

ART UNIT

PAPER NUMBER

1797

NOTIFICATION DATE

DELIVERY MODE

09/02/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/534,893	<b>Applicant(s)</b> WATANABE ET AL.	
	<b>Examiner</b> TOM P. DUONG	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2, 4-11, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/35144.

Regarding claims 1, 10, and 18-20, WO '144 discloses a mat (30) for mounting a pollution control element (20) in a pollution control device, said mat comprising at least an alumina fiber layer (non-intumescent layer of polycrystalline alumina fiber, pages 15, lines 23-30) and a ceramic fiber layer (ceramic fiber, page 13, lines 13-16); a housing (11); and a pollution control element (20) of a catalytic converter in combination of engine exhaust (page 1).

With respect to the weight ratio of alumina fiber and ceramic fiber, WO '144 discloses the non-intumescent layer of polycrystalline alumina fiber has about 10 - 99.5 percent inorganic fiber (page 15, lines 15-30) and the ceramic fiber layer has about 10-65 percent inorganic fiber (page 10, lines 27-31). It would have been obvious in view of WO '144 to one having ordinary skill in the art to optimize the ratio of the alumina fiber and ceramic fiber to obtain a mat with improved resiliency for wide range of operating temperature since it has been held that where the general conditions of a claim are

Art Unit: 1797

disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (*In re Allen* 105 USPQ 233).

With respect to the mat maintains holding strength even when exposed to high temperatures in excess of 800°C for long periods of time, WO '144 appears to disclose the mat that exhibits such characteristics (page 28, lines 14-22 and Table 6).

Regarding claims 2 and 11, WO '144 discloses the alumina fiber layer and said ceramic fiber layer form a single sheet without the use of an auxiliary bonding means (Abstract).

Regarding claims 4-5 and 13-14, WO '144 discloses the alumina and ceramic content fiber of the claimed invention (page 16, lines 10-24).

Regarding claims 6 and 15, WO '144 appears to disclose the manufacturing technique of the fiber layers of the claimed invention (page 18). Note, a product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even through the prior product was made by a different process. *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 7, WO '144 discloses the mat is for mounting a catalyst support in a catalytic converter (Fig. 1).

Regarding claims 8 and 16, WO '144 discloses neither layer includes an expanding material (page 12, lines 1-17).

Regarding claims 9 and 17, WO '144 discloses the same mat as the claimed invention; thus, one of ordinary skill in the art would have expected the mat of WO '144

Art Unit: 1797

capable of maintaining the holding strength of the claimed invention at most thru routine optimization.

2. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/35144 as applied to claim 1 above, and further in view of Langer (5,250,269).

Regarding claims 3 and 12, WO '144 essentially discloses the features of the claimed invention except the ceramic fiber layer are annealed at a temperature of 700-1200 °C.

Langer teaches the benefit of annealing the ceramic fiber in order to obtain the mat with a high resiliency value, which would not become loose after the heat-insulating mat has been compressed by thermal expansion of a metallic monolith within a canister of a catalytic converter (Col. 2, lines 31-44).

Thus, it would have been obvious in view of Langer to one having ordinary skill in the art to modify the device of WO '144 with an annealed ceramic fiber as taught by Langer in order to gain the above benefit.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOM P. DUONG whose telephone number is (571)272-2794. The examiner can normally be reached on 8:00AM - 4:30PM (IFP).

Art Unit: 1797

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tom P. Duong/  
Primary Examiner, Art Unit 1797